

## NANOPARTICULATE BIOACTIVE AGENTS

### ABSTRACT

Bioactive agents may be reproducibly converted into particles having diameters in the range of about 5 to about 2000 nanometers (nm). Conversion is  
5 accomplished by dissolving the bioactive agent in a solvent for the bioactive agent, and rapidly altering the polarity of the solution to make it a non-solvent for the bioactive agent, for example by diluting the bioactive agent solution with an excess of a liquid that is a non-solvent for the bioactive agent but is miscible with the solvent. Precipitated bioactive agent nanoparticles are collected by centrifugation,  
10 filtration or lyophilization. The nanoparticles have a relatively narrow size distribution, and the average diameter can be controlled by choice of solvent and non-solvent. The nanoparticles are typically amorphous. A surfactant may be added to ensure dispersion of the particles when administered. In the preferred embodiment, the bioactive agent is a drug with low aqueous solubility.

15